OL-067 Prevalence of cerebral opportunistic infections in HIV/AIDS patients from Timiş County, Romania

I. Marincu[1]*, L. Negrutiu[1], I. Iacobiciu[1], A. Neghina[1], L. Tirnea[1], C. Calma[1], R. Neghina[1]. [1]*Victor Babes University of Medicine and Pharmacy, Romania*

Background: The most severe cerebral opportunistic infections appeared in HIV/AIDS patients with severe immunodepression. The objective of this study is to evaluate the prevalence of cerebral opportunistic infections in a group of patients with HIV/AIDS.
Methods: We have retrospectively analyzed the medical records of 62 adults patients diagnosed with HIV/AIDS, admitted in Hospital of Infectious Disease, Timisoara. The positive diagnosis of cerebral opportunistic infections was established based on clinical elements (fever, weight loss, headache, somnolence, anorexia, asthenia etc) and laboratory data (leukocyte count, erythrocyte sedimentation rate, C reactive protein, titre of antistreptolysin O antibodies, electrophoresis, blood culture, sputum culture, ELISA, Western blot, glossal exudate and CHROM-AGAR or Sabouraud medium culture). For tuberculosis (TB) and cryptococcal meningitis examination of cerebrospinal fluid (CSF) with special stain (India ink for *Cryptococcus neoformans*, Zeehl-Neelsen for *Mycobacterium tuberculosis*) was essential. Imagistic diagnosis (CT, MRI) was helpful in order to establish diagnosis of cerebral toxoplasmosis and tuberculosis meningitis complicated with cerebral tuberculoma. The data obtained was statistically processed with EpiInfo 5 program.
Results: From study group were diagnosed and treated 18 (29.03%) patients with cerebral opportunistic infections: 4 (6.45%) with with cerebral toxoplasmosis, 6 (9.67%) with cryptococcal meningitis and 8 (12.90%) with TB meningitis. Mean CD4 count was 45 cells/mm^3 for patients with toxoplasmosis, 68 cells/mm^3 for TB meningitis and 72 cells/mm^3 for cryptococcal meningitis. Cerebral imaging (CT, MRI) had an important role in diagnosis of cerebral toxoplasmosis and 2 cases of TB meningitis with tuberculoma. By etiological treatment associated with antiretroviral therapy we registered a favourable evolution in 14/18 cases and 4/18 (6.45%) deaths (2 cases with cerebral toxoplasmosis and 2 cases with TB meningitis).
Conclusions: high prevalence of cerebral opportunistic infections in patients with HIV/AIDS, along of early diagnostic allow the usage of etiological therapy and the specific prevention and control measures.

OL-068 Epidemiology of HIV infection among men who have sex with men in Shanghai, China

Y.F. Zheng[1]*, H.Z. Lu[1,2], C.G. Pan[1], R.F. Zhang[1], L. Liu[1], Y.Z. Shen[1], J.R. Wang[1], X.Y. Jiang[1], T.K. Qi[1], M.Y. Pang[3]. [1]*Shanghai Public Health Clinical Center, Fudan University, Shanghai, 201508, China,* [2]*Huashan Hospital, Fudan University, Shanghai, 200040, China,* [3]*Department of Medicine, Rhode Island Hospital and Brown University School of Medicine, Providence, RI 02903, USA*

Background: The rate of homosexual transmission of HIV infection among men who have sex with men (MSM) has increased and it is occurring at younger age. Insufficient epidemiological information has been published in this population. In this study, the epidemiology of HIV/AIDS amongst male patients in Shanghai was examined, in order to provide evidence for AIDS prevention and treatment programs.
Methods: Data on 953 male HIV/AIDS cases, both heterosexual and MSM, were collected and analyzed.
Result: 476 patients were infected through MSM behavior (49.95%), with the percentage having increased from 38.71% of the cases tested in 2005, to 54.59% the cases tested in 2010. Comparing utilization of antiretroviral therapy, the patients in the MSM group started treatment at a younger age (36.05±10.89 years) compared to the heterosexual transmission group (45.79±11.15 years) ($p < 0.01$). More unmarried cases (269; 56.51%) were observed in the MSM group relative to the heterosexual group (87; 18.24%), and educational levels were observed to be higher in the MSM group.
Conclusion: These data suggest that in China, especially in some more economically developed areas such as Shanghai, MSM transmission of HIV infection is increasing rapidly – particularly in well educated young patients. More attention and effective preventive control strategies should be provided to the MSM population to reduce the incidence of unprotected anal intercourse (UAI), and consequently to reduce the risk of HIV infection in MSM. Possibly new strategies such as treatment for prevention (treating all HIV infected MSM with antiretroviral therapy regardless of CD4 count) or PrEP (Pre Exposure Prophylaxis) should be considered.

OL-069 Interaction between β-catenin and IFNγ signaling to regulate HIV replication in brain astrocytes

W. Li[1,2]*, H. Wu[1], L.J. Henderson[2], L. Al-Harthi[2]. [1]*Department of Infectious Diseases, Beijing You'an Hospital, Capital Medical University, Beijing, China,* [2]*Department of Immunology/Microbiology, Rush University Medical Center, Chicago, IL, USA*

Objective: To evaluate the interplay between IFNγ and β-catenin signaling that impacts HIV replication in human astrocytes.
Methods: Human IFNγ or IFNα was used to stimulate human primary astrocytes and astrocytoma cell lines, U87MG and U251MG. Activated β-catenin, STATs, DKK1, and GSK3b were determined by flowcytometry. β-Catenin activity was measured by luciferase assay after transfecting TOPflash reporter construct into cells. HIV_{BAL} was used to infect cells, and viral replication was measured by p24 ELISA. Specific inhibitors were used to inhibit STAT1, STAT3 and DKK1. To overexpress or suppress β-catenin, constitutively active β-catenin and dominant negative TCF-4 constructs were transfected into cells, respectively.
Results: We demonstrated that IFNγ, not IFNα, mediated HIV productive replication in astrocytes. IFNγ inhibited β-catenin signaling, and overexpression or suppressing β-catenin eliminated the regulation of IFNγ on HIV replication. IFNγ induced a β-catenin pathway inhibitor DKK1 by 2-fold. Inhibiting DKK1 or STAT3 abrogated the ability of IFNγ to induce HIV replication, while inhibiting STAT1 or GSK3b had no effect.
Conclusions: These findings point to cross-talk between IFNγ and β-catenin signaling that may exert both biologic and virologic effects in central nervous system in HIV infections.